

10/511148

DT04 Rec'd PCT/PTO 14 OCT 2004

Amendments to the Claims

1. (Original) A method for producing a monoclonal antibody, said method comprising the steps of:

- a) introducing at least one candidate antigen into an animal;
- b) recovering antibody-producing cells from said animal and rendering these cells into a single cell suspension;
- c) generating an immortalized cell line from said single cell suspension;
- d) screening the supernatant of said immortalized cell line against a protein chip on which the candidate antigen is displayed; and
- e) selecting as said monoclonal antibody, an antibody that binds to said candidate antigen.

2. (Original) The method of claim 1 wherein said animal is a mouse, a rat, a guinea pig or a rabbit.

3. (Currently amended) The method of claim 1 ~~or claim 2~~ wherein said candidate antigen is a purified candidate antigen.

4. (Original) The method of claim 3 wherein between one and fifty different purified candidate antigens are introduced into the animal.

5. (Original) The method of claim 4 wherein between 0.001 and 1000 micrograms of each antigen is introduced into the animal.

6. (Currently amended) The method of ~~any one of claims 1 to 5~~ claim 1 comprising the additional step of supplying the animal with a booster dose of some or all of the antigens which were introduced into the animal prior to the removal of antibody-producing cells.

7. (Currently amended) The method of ~~any one of claims 1 to 6~~ claim 1 wherein the antibody-producing cells are B cells, T cell or stem cells.

8. (Currently amended) The method of ~~any one of claims 1 to 7~~ claim 1 wherein the antibody-producing cells are recovered by removal of spleen tissue, lymph nodes or bone marrow of the animal.

9. (Currently amended) The method of ~~any one of claims 1 to 8~~ claim 1 wherein the immortalized cell line is a hybridoma cell line produced by somatic fusion of the cells in the single cell suspension to myeloma cells.

10. (Currently amended) The method of ~~any one of claims 1 to 9~~ claim 1 wherein said protein chip is a plain-glass slide, a 3D gel pad chip, a microwell chip or a cell chip.

11. (Currently amended) The method of ~~any one of claims 1 to 10~~ claim 1 wherein the step of detecting the monoclonal antibodies bound to the antigens further comprises isotyping the monoclonal antibodies.

12. (Original) The method of claim 11 wherein said step of detecting and isotyping the monoclonal antibodies comprises adding isotype specific anti-immunoglobulin antibodies to said protein chip, wherein each anti-immunoglobulin antibody having a different isotype specificity has a different label, and detecting the presence of said labels.

13. (Currently amended) The method of ~~any one of claims 1 to 12~~ claim 1 further comprising assessing the specificity with which each isolated monoclonal antibody binds to an antigen using a protein chip comprising said antigen.

14. (Original) A high-throughput method for producing a plurality of monoclonal antibodies, each of which binds to a different candidate antigen, comprising the steps of:
- a) introducing a plurality of candidate antigens into an animal;
 - b) recovering antibody-producing cells from said animal and rendering these cells into a single cell suspension;
 - c) generating immortalized cell lines from said single cell suspension;
 - d) screening the supernatant of said immortalized cell lines against one or more protein chips on which the candidate antigens are displayed; and
 - e) selecting as said monoclonal antibodies, antibodies that bind to said candidate antigens.

15. (Currently amended) A method according to claim 14, high-throughput method for producing a plurality of monoclonal antibodies, each of which binds to a different candidate antigen, comprising the steps of:

- a) introducing a plurality of candidate antigens into an animal;
- b) recovering antibody-producing cells from said animal and rendering these cells into a single cell suspension;
- c) generating immortalized cell lines from said single cell suspension;
- d) screening the supernatant of said immortalized cell lines against one or more protein chips on which the candidate antigens are displayed; and
- e) selecting as said monoclonal antibodies, antibodies that bind to said candidate antigens, which further comprises any of the steps recited in any one of claims 1 to 13 claim 1.

16. (Currently amended) A method for producing an immortalised immortalized cell line that produces a monoclonal antibody of interest, said method comprising the steps of:

- a) introducing at least one candidate antigen into an animal;

- b) recovering antibody-producing cells from said animal and rendering these cells into a single cell suspension;
- c) generating an immortalized cell line from said single cell suspension;
- d) screening the supernatant of said immortalized cell line against a protein chip on which the candidate antigen is displayed; and
- e) selecting as said immortalised immortalized cell line, that which produces a supernatant containing an antibody that binds to said candidate antigen.

17. (Currently amended) An immortalised immortalized cell line isolated by the method of claim 16.

18. (Original) A method for producing a plurality of monoclonal antibodies, each of which binds to a different purified candidate antigen, comprising introducing a plurality of purified candidate antigens into an animal, each purified candidate antigen being derived from a different source.

19. (Currently amended) A ~~method according to claim 18~~ method for producing a plurality of monoclonal antibodies, each of which binds to a different purified candidate antigen, comprising introducing a plurality of purified candidate antigens into an animal, each purified candidate antigen being derived from a different source, which further comprises any of the steps recited in ~~any one of claims 1 to 13~~ claim 1.

20. (Currently amended) A monoclonal antibody isolated by the method of ~~any one of claims 1 to 16 or 18 to 19~~ claim 1.

21. (Original) An antibody according to claim 20 which is an anti-idiotype antibody.

22. (Original) An antibody according to claim 21 which is an anti-anti-idiotype antibody.

23. (Currently amended) An immortalized cell line producing a monoclonal antibody of claim 20, ~~claim 21 or claim 22~~.

24. (Currently amended) An immortalized cell line according to claim 23 which is a hybridoma cell line.

25. (Currently amended) A bank of antibodies according to claim 20, ~~claim 21 or claim 22~~.

26. (Currently amended) A bank of immortalized cell lines according to claim 15; ~~claim 21 or claim 22~~.